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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,976	02/06/2001	Wesley M. Enroth	EN9-98-072US2	3360

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EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 06/06/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/777,976

Applicant(s)

ENROTH ET AL.

Examiner

Rick K. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8,10,12,13,15,16 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8,10,12,13,15,16 and 21-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Species II and B in Paper Nos. 8 and 10 is acknowledged. Applicant's traverse of the requirement for election of species is noted, asserting that there is no serious burden on the examiner to examine all claims. The traverse has been carefully considered, but is not persuasive because the reasons proffered do not appear germane to the propriety of a requirement for election of species. The sections of the manual cited relate to restriction, not a requirement for election of species, which is clearly covered in section 808.01(a). Once the claims are determined to be directed to mutually patentable inventions and the Office requires an election of species, a persuasive traverse is an admission on the record that applicant does not find the claimed species are patentable, one over the other. Having not done so, the reasons presented are not persuasive. Applicant is not entitled to examination of multiple independent inventions in one application. Moreover, examination of the independent inventions herein would clearly present a burden because the searches will not be coextensive. Accordingly, the requirement is repeated and made final. All non-elected Species will be combined if applicant will stipulate that they are obvious over each other.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by.

Amago discloses in Fig. 12 with a solder resist 107 provided on the bottom of the PCB to obstruct molten solder. 2 is a conductive lining and 5 is cured.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-6, 8, 10, and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amago et al (US 5,402,314) in view of Majd (US 5,155,904).

Amago discloses placing and fixing top and bottom components (Fig. 2), lining an interior wall of the via (2), Fig. 9 shows 2 at the end of the bottom surface.

Amago fails to disclose wave soldering and providing leaded components.

Majd discloses wave soldering (Fig. 1) and providing leaded and PIH components (44, 46, 53, 54 and 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Amago by wave soldering and providing leaded and PIH components, as taught by Majd, for the purpose of increasing production by mass soldering IC components.

6. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sabotke et al (US 5,737,834) in view of Nakaso et al (US 5,638,598), and further in view of Lauffer et al (US 5,867,898).

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Sabotke discloses in Fig. 1 steps of applying solder paste, reflow soldering components, and fixing a second component onto the PCB. In light of the claimed invention, Sabotke's components mounted on the top surface will be the bottom components mounted in the claimed invention, and vice versa.

Sabotke fails to disclose providing a PCB having a soldered via electrically communicating between layers as well as top to bottom layers and screen printing solder.

Nakaso discloses in Fig. 3 a solder plug in a via formed in a PCB.

Lauffer discloses in claim 8 screening the solder paste.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sabotke by providing a PCB having a soldered via electrically communicating between layers as well as top to bottom layers and screen printing solder, as taught by Nakaso and Lauffer, for the purpose of allowing forming densely formed contacts to electrically communicate between layers and top and bottom surfaces, as well as increase production by mass soldering a plurality of vias and pads.

7. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sabotke et al (US 5,737,834)/Nakaso et al (US 5,638,598)/Lauffer et al (US 5,867,898) as applied to claims 12-13 above, and further in view of Majd (US 5,155,904) and Thompson, Jr. (US 5,704,535).

Sabotke/Nakaso/Lauffer fail to mount PIH components and wave soldering with shielding.

Madj discloses mounting PIH components in Figs 8-9.

Thompson discloses shielding the board during wave soldering (Fig. 1).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sabotke/Nakaso/Lauffer by mounting PIH components and shielding the board during wave soldering, as taught by Madj and Thompson, for the purpose of performing desired operation and protecting the sensitive parts of the board.

*Conclusion*

**8. Please provide reference numerals to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (703) 308-4784. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Friday, except for maxi-flex day off (any one of working days).

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

A handwritten signature in black ink, appearing to read 'Richard Chang', written over a horizontal line.

**RICHARD CHANG  
PRIMARY EXAMINER**

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RC

June 4, 2003